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EXAMINER
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ANWARI, MACEEH

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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/737,207  
Filing Date: December 16, 2003  
Appellant(s): HAAGENS ET AL.

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Michael G. Fletcher  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed 4/29/2008 appealing from the Office action mailed 11/07/2007.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

2004/0190533 A1	Modi et al.	09-2004
WO 00/72142 A1	Recio et al.	11-2000

Long, James. "Overview of Modern SCSI Networking Protocols."

<http://www.ciscopress.com/articles/printfriendly.asp?p=484553&rl=1>, August 4, 2006,  
Cisco Press.

### **(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

#### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Throughout the text of the claims the appellant utilizes the term *protocol*, in some areas with the conventional meaning of the term (i.e. *a series of steps or rules*); however in other areas the appellant goes onto attributing the term *protocol* as an actual apparatus/entity (i.e. notifying the second protocol). It is unclear how a series of steps/rules can be both an abstract idea and an actual apparatus/entity. The examiner will interpret the term protocol in the broadest reasonable sense.

#### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2 & 4 & 7-10 & 11-12 & 14 & 17-19 & 20-23 & 25 & 26 are rejected under 35 U.S.C. 102(b) as being taught by Recio et al (hereinafter Recio), International Publication No. WO 00/72142.

Recio teaches:

**Claim 1:**

An apparatus for managing flow control of a data transfer, comprising: a first protocol associated with a plurality of receive buffers (Figures 1-5 and Page 8 lines 4-11; multiple storage and memory components); a second protocol adapted to manage the plurality of receive buffers for the first protocol (Figure 1-5 and Page 5 lines 5-12; processors); and a third protocol that determines whether one of the plurality of receive buffers is available for a data packet and (a) if one of the plurality of receive buffers is available, permits an acknowledgement packet to be sent to a node that sent the data packet, and (b) if one of the plurality of receive buffers is unavailable, drops the data packet, notifies the second protocol regarding the unavailability of the plurality of receive buffers, and withholds the acknowledgement packet (Figures 1-5 Page 12 line 25- Page 13 line 5 & Page 14 lines 3-7 & Page 23 lines 29-31; reliability, acknowledgment, successive retries and time-outs).

**Claim 2:**

Wherein the first protocol is an upper layer protocol ("ULP") (Figure 11 & Page 26 lines 7-9 & 23-24; upper layer protocols and applications).

**Claims 4:**

Wherein the second protocol is a datamover protocol (Figures 1-5 & 9B & 11 and Page 7 lines 26-30 & Page 9 lines 29 – Page 10 lines 2 & 26-31; multiple send and receive buffers, messages and components).

**Claim 7:**

Comprising a transport protocol that generates a request to the third protocol to determine whether one of the plurality of receive buffers is available for the data packet (Figures 2-5 & 9B & 11 and Page 38 lines 17-26; end-node's availability).

**Claim 8:**

Wherein the data packet comprises a sequence field that corresponds to a reliability tracking value for the data packet (Figure 9B and Page 5 lines 13-19 and Page 14 lines 3-11; frame components).

**Claim 9:**

Wherein the acknowledgement packet comprises an acknowledgement field that corresponds to an identity of data received by the transport protocol (Figures 1 & 9B and Page 5 lines 13-19 & Page 8 lines 4-19 & Page 14 lines 3-11; data frames and headers).

**Claim 10:**

Comprising a transport protocol that uses a remote direct memory access network interface card ("RNIC") to receive the data packet and send the acknowledgement packet (Page 10 lines 3-19; it is inherent that, since RDMA is

utilized throughout the Recio invention, an RNIC would be used as an interface card).

**Claim 11:**

A network, comprising: a plurality of systems, at least one of the plurality of systems executing a process; and at least one input/output device adapted to receive a data packet from the at least one of the plurality of systems (Figures 1-5 and Page 4 lines 21-28; multiple systems/processors, WANs and LANs), the at least one input/output device comprising: a first protocol associated with a plurality of receive buffers (Figures 1-5 and Page 8 lines 4-11; multiple storage and memory components); a second protocol adapted to manage the plurality of receive buffers for the first protocol (Figure 1-5 and Page 5 lines 5-12; processors); and a third protocol that determines whether one of the plurality of receive buffers is available for a data packet and (a) if one of the plurality of receive buffers is available, permits an acknowledgement packet to be sent to a node that sent the data packet, and (b) if one of the plurality of receive buffers is unavailable, drops the data packet, notifies the second protocol regarding the unavailability of the plurality of receive buffers, and withholds the acknowledgement packet (Figures 1-5 Page 12 line 25- Page 13 line 5 & Page 14 lines 3-7 & Page 23 lines 29-31; reliability, acknowledgment, successive retries and time-outs).

**Claim 12:**

Wherein the first protocol is an upper layer protocol ("ULP") (Figure 11 & Page 26 lines 7-9 & 23-24 upper layer protocols and applications).

**Claim 14:**

Wherein the second protocol is a datamover protocol (Figures 1-5 & 9B & 11 and Page 7 lines 26-30 & Page 9 lines 29 -- Page 10 lines 2 & 26-31; multiple send and receive buffers, messages and components).

**Claim 17:**

Comprising a transport protocol that generates a request to the third protocol to determine whether one of the plurality of receive buffers is available for the data packet (Figures 2-5 & 9B & 11 and Page 38 lines 17-26; an end-node's availability).

**Claim 18:**

Wherein the data packet comprises a sequence field that corresponds to a reliability tracking value for the data packet (Figure 9B and Page 5 lines 13-19 and Page 14 lines 3-11; frame components).

**Claim 19:**

Wherein the acknowledgement packet comprises an acknowledgement field that corresponds to an identity of data received by the transport protocol (Figures 1 & 9B and Page 5 lines 13-19 & Page 8 lines 4-19 & Page 14 lines 3-11; data frames and headers).

**Claim 20:**



Comprising a transport protocol that uses a remote direct memory access network interface card ("RNIC") to receive the data packet and send the acknowledgement packet (Page 10 lines 3-19; it is inherent that, since RDMA is utilized throughout the Recio invention, an RNIC would be used as an interface card).

**Claim 21:**

A method of managing flow control of a data transfer, the method comprising the acts of: receiving a data packet; determining whether at least one receive buffer is available for the data packet (Figures 2-5 & 9B & 11 and Page 38 lines 17-26; end-node's availability); if the at least one buffer is available, sending an acknowledgement packet to a node that sent the data packet (Figures 1-5 Page 12 line 25- Page 13 line 5 & Page 14 lines 3-7 & Page 23 lines 29-31; reliability, acknowledgment, successive retries and time-outs); and if the at least one buffer is unavailable, dropping the data packet, providing a notification regarding the unavailability of the at least one buffer, and withholding an acknowledgement packet from the node that sent the data packet (Figures 1-5 Page 12 line 25- Page 13 line 5 & Page 14 lines 3-7 & Page 23 lines 29-31; reliability, acknowledgment, successive retries and time-outs).

**Claim 22:**

The method set forth in claim 21, comprising the act of placing the data packet into the at least one buffer if the at least one buffer is available (Figures 1-

5 Page 12 line 25- Page 13 line 5 & Page 14 lines 3-7 & Page 23 lines 29-31; reliability, acknowledgment, successive retries and time-outs).

**Claim 23:**

The method set forth in claim 21, comprising the act of transmitting the data packet according to a transmission control protocol ("TCP") (Figures 1-5 & 9B & 11 and Page 15 lines 1-18; compatibility with TCP and other standard communication protocols).

**Claim 25:**

The method set forth in claim 21, comprising the act of notifying a process associated with the at least one buffer once the at least one buffer is determined to be unavailable (Figures 2-5 & 9B & 11 and Page 38 lines 17-26; end-node's availability).

**Claim 26:**

An apparatus for managing flow control of a data transfer, comprising: means for receiving a data packet at a first protocol (Page 9 lines 29 –31 & Page 10 lines 1-2 & 26-31 & Page 11 lines 1-2; reads off of the limitation of a single or multiple receive buffers); means for determining whether at least one receive buffer is available for the data packet (Figures 1-5 and Page 8 lines 4-11; multiple storage and memory components); means for sending an acknowledgement packet to a node that send the data packet if the at least one buffer is available (Figures 1-5 Page 12 line 25- Page 13 line 5 & Page 14 lines 3-7 & Page 23 lines 29-31; reliability, acknowledgment, successive retries and

time-outs); and means for dropping the data packet, notifying a second protocol regarding the unavailability of the at least one buffer, and preventing an acknowledgement packet from being sent if the at least one buffer is unavailable (Figures 1-5 Page 12 line 25- Page 13 line 5 & Page 14 lines 3-7 & Page 23 lines 29-31; reliability, acknowledgment, successive retries and time-outs).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 3 and 13 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Recio et al (WO 00/72142 A1) in view of "Overview of Modern SCSI Networking Protocols."

Recio teaches the invention as discussed above and further teaches SCSI and the availability of an end node.

Recio fails to teach the apparatus set forth in claims 3 and 13, wherein the Upper layer protocol being iSCSI.

“Overview of Modern SCSI Networking Protocols,” teaches that iSCSI is designed to work with existing SCSI architecture and are compatible with each other for the purpose of facilitating communication over TCP/IP networks.

It would have been obvious to one having ordinary skill in the art at the time of the Applicant's invention to have modified the invention of Recio with iSCSI replacing SCSI because iSCSI is designed to work with existing SCSI architecture and are compatible with each other for the purpose of facilitating communication over TCP/IP networks.

Claims 5 and 15 and 6 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Recio et al (WO 00/72142 A1) in view of Modi et al., U.S. Publication NO.: 2004/0190533 A1.

Recio teaches the invention as discussed above and further teaches RDMA and a datamover protocol.

Recio fails to teach the apparatus set forth in claims 5 and 15, wherein the third protocol is an iWARP protocol and fails to teach the iWARP protocol is a direct data placement (DDP) protocol.

Modi et al., U.S. Publication NO.: 2004/0190533 A1, teaches that iWARP is simply a reference to the suite of protocols comprising the RDMA protocol and teaches that the DDP protocol may translate messages from the RDMA protocol

for the purpose of transmission across a network, such as a switch network (Par. 22 Lines 1-3).

It would have been obvious to one having ordinary skill in the art at the time of the Applicant's invention to have modified the invention of Recio with iWARP being one of the protocols and the datamover protocol being a direct data placement protocol; for the purpose of facilitating communication over TCP/IP networks.

#### **(10) Response to Argument**

Appellant's arguments filed have been fully considered but are not persuasive. In substance, the appellant argues 1) that the Section 112 rejection of claims 1- 26 is improper; 2) that the Recio reference fails to describe a processor being further adapted to operate according to a third protocol that determines whether one of the plurality of receive buffers is available for a data packet; 3) that the Recio reference fails to describe permitting an acknowledgment packet to be sent if one of the plurality of receive buffers is available; 4) that the Recio reference fails to describe actively *notifying* the second protocol regarding the unavailability of the plurality of receive buffers if one of the plurality of receive buffers is unavailable.

In response to 1), the Examiner respectfully disagrees. Appellant argues that the term *protocol* is clearly defined in the specification, as either a process or a series of steps/rules; however he goes on to describing/equating it to an apparatus/entity (i.e. *notifying* the second protocol). It is still unclear which the appellant intends, whether it is

a series of rules/steps or an entity. Therefore, the section 112 rejection of **claims 1-26** still remain.

In response to 2), the Examiner respectfully disagrees. **Claims 1-20** recite language such as “adapted to” or “configured to”. These terminologies render the claim indefinite as the scope of the claim becomes open ended, undeterminable, and/or based upon intended use. Language that suggests or makes optional but does not require steps to be performed or does not limit a claim to a particular structure does not limit the scope of a claim or claim limitations.

It is this subject matter that must be examined. As a general matter, the grammar and intended meaning of terms used in a claim will dictate whether the language limits the claim scope. Language that suggests or makes optional but does not require steps to be performed or does not limit a claim to a particular structure does not limit the scope of a claim or claim limitation. The following are examples of language that may raise a question as to the limiting effect of the language in a claim:

(A) statements of intended use or field of use,

(B) “adapted to” or “adapted for” clauses,

(C) “wherein” clauses, or

(D) “whereby” clauses

(E) “configured to” clauses.

This list of examples is not intended to be exhaustive. See also MPEP § 2111.04. USPTO personnel are to give claims their broadest reasonable interpretation in light of the supporting disclosure. In re Morris, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023,

1027-28 (Fed. Cir. 1997). Limitations appearing in the specification but not recited in the claim are not read into the claim. E-Pass Techs., Inc. v. 3Com Corp., 343 F.3d 1364, 1369, 67 USPQ2d 1947, 1950 (Fed. Cir. 2003) (claims must be interpreted “in view of the specification” without importing limitations from the specification into the claims unnecessarily). In re Prater, 415 F.2d 1393, 1404-05, 162 USPQ 541, 550551 (CCPA 1969). See also In re Zletz, 893 F.2d 319, 321-22, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989) (“During patent examination the pending claims must be interpreted as broadly as their terms reasonably allow.... The reason is simply that during patent prosecution when claims can be amended, ambiguities should be recognized, scope and breadth of language explored, and clarification imposed.... An essential purpose of patent examination is to fashion claims that are precise, clear, correct, and unambiguous. Only in this way can uncertainties of claim scope be removed, as much as possible, during the administrative process.”).

The appellant has simply stated structural elements with an intended use. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

However, with regards to **claims 21-26**, determining whether one of the plurality of receive buffers is available for a data packet. Recio, meets this limitation by disclosing multiple processors with receiving and sending *buffers* and queue pairs which provide communication between processes (page 9 lines 13-22). Furthermore, Recio

discloses the placing of incoming data, acknowledgments, sequence numbers and a tracking mechanism for each frame and it is through this that it ensures reliable communications between end-nodes--i.e. determines whether a receive buffer is available for a data packet or not (Figures 1-5 & page 14 lines 3-12).

In response to 3), the Examiner respectfully disagrees. Recio, discloses placing of incoming data, acknowledgments, sequence numbers and a tracking mechanism for each frame and it is through this that it ensures reliable communications between end-nodes (Figures 1-5 & page 14 lines 3-12). Therefore, Recio teaches the sending of acknowledgment packets.

In response to 4), the Examiner agrees with Appellant in that the lack of transmission of an acknowledgment is not the same as *actively notifying* the second protocol regarding the unavailability of the plurality of receive buffers. However, in response to appellant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., *actively*) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

#### **(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,



Art Unit: 2151

M.A. 7/11/2008

/William C. Vaughn, Jr./

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